AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (currently amended) A method for producing ~~recombinant mini-Adenovirus~~ a recombinant vector comprising:

a) providing:

i) a first recombinant vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest;

3) adenovirus packaging sequence linked to one of said inverted terminal repeats; and

4) ~~an adeno-associated~~ a first adeno-associated virus terminal repeat sequence operably linked to said 3' end of said nucleotide sequence of interest,

wherein said first vector lacks a second adeno-associated virus terminal repeat sequence, and lacks one or more adenovirus early gene ~~region~~ regions selected from E1, E2, E3, and E4 gene ~~region~~ regions; and

ii) a cell capable of expressing said one or more adenovirus early gene ~~which is~~ regions which are lacking from said first vector;

b) introducing said first vector into said cell to produce a transformed cell; and

c) culturing said transformed cell under conditions such that a second vector is produced, wherein said second vector is selected from:

i) a vector, comprising in operable combination:

1) adeno-associated virus terminal repeat-DD sequence;

2) first and second inverted copies of a nucleotide sequence of interest flanking said adeno-associated virus terminal repeat-DD sequence;

3) left and right inverted terminal repeats of adenovirus flanking said first and second inverted copies of said nucleotide sequence of interest; and

4) an adenovirus packaging sequence linked to one of said inverted terminal repeats, and

ii) a vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest; and

3) an adenovirus packaging sequence linked to one of said inverted terminal repeats.

2. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 1, wherein said cell is capable of expressing one or more Rep proteins, and said culturing results in expression of said one or more Rep proteins.

3. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 1, wherein said second vector is encapsidated.

4. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 3, further comprising d) recovering said encapsidated second vector.

5. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 4, further comprising e) purifying said recovered encapsidated second vector.

Claims 6-10 (previously withdrawn)

11. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 2, wherein expression of one or more Rep proteins is inducible.

12. (currently amended) A method for producing ~~recombinant mini-Adenovirus~~ a recombinant vector comprising:

a) providing:

i) a first recombinant vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest;

3) adenovirus packaging sequence linked to one of said inverted terminal repeats; and

4) ~~an adeno-associated~~ a first adeno-associated virus terminal repeat sequence operably linked to said 3' end of said nucleotide sequence of interest,

wherein said first vector lacks a second adeno-associated virus terminal repeat sequence, and lacks one or more adenovirus early gene ~~region~~ regions selected from E1, E2, E3, and E4 gene ~~region~~ regions;

ii) a cell capable of expressing one or more Rep proteins; and

iii) helper adenovirus;

b) introducing said first vector and genome of said helper adenovirus into said cell to produce a transformed cell; and

c) culturing said transformed cell under conditions such that said transformed cell expresses said one or more Rep proteins, and a second vector is produced, said second vector selected from:

i) a vector, comprising in operable combination:

1) adeno-associated virus terminal repeat-DD sequence;

2) first and second inverted copies of a nucleotide sequence of interest flanking said adeno-associated virus terminal repeat-DD sequence;

3) left and right inverted terminal repeats of adenovirus flanking said first and second inverted copies of said nucleotide sequence of interest; and

4) an adenovirus packaging sequence linked to one of said inverted terminal repeats, and

ii) a vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest; and

3) an adenovirus packaging sequence linked to one of said inverted terminal repeats.

13. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 12, wherein said cell lacks expression of said one or more adenovirus early gene ~~region which is~~ regions which are lacking from said first vector.

14. (currently amended) A method for producing ~~recombinant mini-Adenovirus~~ a recombinant vector comprising:

a) providing:

i) a first recombinant vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest;

3) ~~an adeno-associated~~ a first adeno-associated virus terminal repeat sequence operably linked to said 3' end of said nucleotide sequence of interest,

wherein said first vector lacks a second adeno-associated virus terminal repeat sequence, and lacks one or more adenovirus early gene ~~region~~ regions selected from E1, E2, and E4 gene ~~region~~ regions;

ii) a cell capable of expressing said one or more adenovirus early gene region selected from E1, E2, and E4 gene ~~region~~ regions;

iii) a cell capable of expressing said one or more adenovirus early gene ~~which is~~ regions which are lacking from said first vector; and

~~iii)~~ iv) adeno-associated virus;

b) introducing said first vector and genome of said adeno-associated virus into said cell to produce a transformed cell; and

c) culturing said transformed cell under conditions such that a second vector is produced, said second vector selected from:

i) a vector, comprising in operable combination:

1) adeno-associated virus terminal repeat-DD sequence;

2) first and second inverted copies of a nucleotide sequence of interest flanking said adeno-associated virus terminal repeat-DD sequence;

3) left and right inverted terminal repeats of adenovirus flanking said first and second inverted copies of said nucleotide sequence of interest; and

4) an adenovirus packaging sequence linked to one of said inverted terminal repeats, and

ii) a vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest; and

3) an adenovirus packaging sequence linked to one of said inverted terminal repeats.

15. (currently amended) A method for producing ~~recombinant mini-Adenovirus~~ a recombinant vector comprising:

a) providing:

i) a first recombinant vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest;

3) adenovirus packaging sequence linked to one of said inverted terminal repeats; and

4) ~~an adeno-associated~~ a first adeno-associated virus terminal repeat sequence operably linked to said 3' end of said nucleotide sequence of interest,

wherein said first vector lacks a second adeno-associated virus terminal repeat sequence, and lacks adenovirus E3 early gene ~~region~~ regions; and

ii) a cell;

b) introducing said first vector into said cell to produce a transformed cell; and

c) culturing said transformed cell under conditions such that a second vector is produced, said second vector selected from:

i) a vector, comprising in operable combination:

1) adeno-associated virus terminal repeat-DD sequence;

2) first and second inverted copies of a nucleotide sequence of interest flanking said adeno-associated virus terminal repeat-DD sequence;

3) left and right inverted terminal repeats of adenovirus flanking said first and second inverted copies of said nucleotide sequence of interest; and

4) an adenovirus packaging sequence linked to one of said inverted terminal repeats, and

ii) a vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest; and

3) an adenovirus packaging sequence linked to one of said inverted terminal repeats.

16. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 15, wherein said cell is capable of expressing one or more of Rep proteins, and said culturing results in expression of said one or more Rep proteins.

17. (currently amended) A method for producing ~~recombinant mini-Adenovirus~~ a recombinant vector comprising:

a) providing:

i) a first recombinant vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest;

3) adenovirus packaging sequence linked to one of said inverted terminal repeats; and

4) ~~an adeno-associated~~ a first adeno-associated virus terminal repeat sequence operably linked to said 3' end of said nucleotide sequence of interest,

wherein said first vector lacks a second adeno-associated virus terminal repeat sequence, and

wherein said nucleotide sequence of interest in said first vector comprises adeno-associated virus Rep gene region; and

ii) a cell;

b) introducing said first vector into said cell to produce a transformed cell; and

c) culturing said transformed cell under conditions such that said transformed cell expresses one or more Rep proteins, and a second vector is produced, said second vector selected from:

i) a vector, comprising in operable combination:

1) adeno-associated virus terminal repeat-DD sequence;

2) first and second inverted pieces of a nucleotide sequence of interest flanking said adeno-associated virus terminal repeat-DD sequence;

3) left and right inverted terminal repeats of adenovirus flanking said first and second inverted copies of said nucleotide sequence of interest; and

4) an adenovirus packaging sequence linked to one of said inverted terminal repeats, and

ii) a vector, comprising in operable combination:

1) a nucleotide sequence of interest having a 5' end and a 3' end;

2) left and right inverted terminal repeats of adenovirus flanking said nucleotide sequence of interest; and

3) an adenovirus packaging sequence linked to one of said inverted terminal repeats.

18. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 17, wherein said first vector lacks one or more adenovirus early gene ~~region~~ regions selected from E1, E2, and E4 gene ~~region~~ regions, and said cell is capable of expressing said adenovirus early gene ~~region which is~~ regions which are lacking from said first vector.

19. (currently amended) The method for producing ~~recombinant mini-Adenovirus~~ the recombinant vector of Claim 17, wherein said first vector lacks adenovirus E3 gene region.